DOCUMENT RESUME

ED 459 716 IR 058 210

AUTHOR	Farmer, Lesley
TITLE	Information Literacy: A Whole School Reform Approach.
PUB DATE	2001-08-00
NOTE	8p.; In: Libraries and Librarians: Making a Difference in the Knowledge Age. Council and General Conference: Conference Programme and Proceedings (67th, Boston, MA, August 16-25, 2001); see IR 058 199.
AVAILABLE FROM	For full text: http://www.ifla.org.
PUB TYPE	Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Standards; *Action Research; Case Studies; High Schools; *Information Literacy; *Information Skills; Inservice Teacher Education; Library Role; Models; Teacher Developed Materials; Teacher Role
IDENTIFIERS	Information Power (AASL AECT)

ABSTRACT

This paper presents an action research case study that provides a model for implementation of information literacy standards. The first section is a brief overview of action research. The second section provides demographic background on Redwood High School (California), the site of the action research. The paper then discusses the need for information literacy action research. The next section addresses determining information skills. Following this, assessing present skills levels, including a list of specific areas that needed work is explored. The sixth section identifies tasks to best meet the study's goals. Next, a description is given on the development of the following research products by the library media teacher: standardized bibliographic stylesheets; research process and product rubrics; a research handbook; and a library research World Wide Web page. The eighth section discusses teacher education and coordination, consisting of faculty in-service workshops. The paper then provides an assessment of the results of the project. The final section evaluates the impact of the action research. (Contains 10 references.) (MES)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 459 716

67th IFLA Council and General Conference August 16-25, 2001

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

A.L. Van Wesemael

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Code Number: 019-106-E
Division Number: III
Professional Group: School Libraries and Resource Centres
Joint Meeting with: -
Meeting Number: 106
Simultaneous Interpretation: Yes

Information literacy: a whole school reform approach

Lesley Farmer
CSULB/Dept. of EdPAC
Long Beach, CA , USA

Students today need to be more information literate than ever in this digital age. Particularly since information crowds cyberspace, often unfettered, the need for students to access authentic and useful resources, as well as interpret and apply those findings, becomes of paramount importance.

Realizing that need, the American Association of School Librarians (AASL) and the Association for Educational Communications and Technology (AECT) developed a set of information literacy standards for student, published in the 1998 volume *Information Power*. A year later, the International Society for Technology in Education (ISTE) published overlapping technology standards for students. Certainly, standards-based education has become more popular since it facilitates assessment, including cross-institutional comparisons. Theoretically, it offers a well-grounded basis for instruction.

However, it is one thing to have standards and another to implement them. For the latter to occur, schoolwide commitment and action are needed. For significant student achievement to occur, systematic and research-grounded work must be conducted and evaluated. The following action research case study provides a model for such implementation.

A Brief Overview of Action Research

While John Dewey used this kind of systematic examination, action research is associated most closely to the Teachers College of Columbia University in the 1940s. The main idea was to give teachers an empirical way to improve practice. Action research may also be considered as a cycle of inquiry, whereby: 1) the present situation is analyzed, 2) questions are raised, 3) factors are identified, 4) solutions are proposed, 5) interventions are developed and measured, 6) data are gathered and analyzed, and 7) new questions are posed.

IR058210

BEST COPY AVAILABLE

Action research provides a reasonable way to improve student achievement as well as educational practice. Particularly when variables are hard to control, action research at least provides a systematic approach and encourages reflective decision-making.

Demographic Background

Redwood High School, the site of the action research, is a suburban, comprehensive high school which began implementing site-based management in 1992. It enjoys a strong academic record and a supportive community. As their accreditation self-study indicated, the student population is becoming more diverse in terms of background and academic-social needs; about 85% are Caucasian (of which about 11% are Middle Eastern), with Latino and Afro-Americans composing a growing percentage of students. In addition, an ESL and extensive special education services broaden the school's scope.

At the point of the research effort in 1998-1999, the library offered over 30,000 print resources and over 80 magazine subscriptions for all curricular areas (as well as elibrary). Fifteen student computer workstations were networked to provide access to CD-ROMs, software and the Internet. Others accessed the library's catalog, supported stand-along applications and special education needs. Instruction has been content-embedded, and several teaching aids complemented verbal help.

Need for Information Literacy Action Research

As the school became a leadership school in the Bay Area School Reform Collaborative (BASRC)[1], a focused effort was defined: assessment and means to help students meet district outcomes (reading, communication, and mathematics to begin with). For instance, starting with the class of 2002, students must meet a reading outcome: "Read and analyze material in a variety of disciplines." The class of 2003 must meet a technology outcome: "Using technology as a tool to access information." The focus was a response, in large part, to existing low reading scores in district testing. In meeting those outcomes or standards, there was a real recognition of students at risk, with the intent of providing resources and services to meet their needs. The library was a vital part of that effort.

Several faculty members and the library staff noticed problems students experienced in accessing and evaluating information. Student research questions were sometimes vague and under-developed; groupwork in the library was sometimes inefficient. Teachers noticed a rise in student plagiarism; students voiced their frustration with assignments. Although a scope-and-sequence of library skills was approved five years earlier, it was not "owned" by the faculty or carried out systematically. A Redwood study group (Research Strategies Study Group--RSSG) was established, cochaired by the library media teacher (the author) and a science teacher. Representatives from the different academic departments and student body participated in the research, and acted as liaisons to facilitate all-faculty support and education. The group's goal was ambitious: *to improve student information literacy competence through*

- developing a repertoire of research strategies
- critically evaluating information
- synthesizing and sharing information in creative, meaningful ways
- incorporating technology into the literacy process.

The group then identified two major research questions:

- What information skills do students need to demonstrate?

- What interventions will improve student skills?

Determining Information Skills

First, the group had to identify what students needed to know and be able to do. The timing was auspicious, with the AASL standards being developed simultaneously on the national level. Additional, the library media teacher spearheaded a literature review to ascertain the latest findings about information literacy and instruction. The group relied heavily on the California School Library Association book *From Information Skills to Information Literacy,* Michael Eisenberg and Robert Berkowitz's Big6 efforts, Colorado Department of Education's work on information literacy standards, the Kansas Association of School Librarians Research Committee study, and the Oregon Educational Media Association's information literacy standards. Using Putman Valley's extensive list of standards and ERIC, the group was able to track down numerous efforts on student information literacy.

The library media teacher created a binder of research and professional readings on information literacy, to which the group referred during and after the study. As the group analyzed the data, patterns emerged. They developed a categorized "inventory" of information literacy skills based on AASL and other standards aligned with district outcomes. The list was then validated by using a modified Delphi method. Faculty, students and library staff examined the list and modified it as deemed appropriate. The department and student liaisons facilitated the process, modifying the list from the first round, and continuing the review until consensus about the items and categories was reached. At a faculty in-service workshop, the Research Skills Inventory List was approved.

Assessing Present Skills Levels

Based on the approved list, the group could then assess the present level of student information literacy to create a baseline for comparison. They used a number of evaluation tools to triangulate results. Library staff observed classes doing library research, noting the level of expertise exhibited for the different competencies. Faculty and students rated present skill attainment by grades. The co-chairs examined student work in alignment with the list. Their findings refined earlier observations; some of the specific areas that needed work included:

- evaluating Web sites; determining the quality and credibility of information
- using specialized reference books
- varying search strategies according to the task at hand
- comparing different sources on the same topic
- using graphic organizers
- writing research papers in a systematic way
- citing sources correctly
- creating annotated bibliographies
- avoiding plagiarism.

The process also brought up the most apparent question: Why did gaps in literacy exist? The next step was to assess the present level of instruction for required courses (since all students had to meet outcomes and needed to share certain instructional experiences). Again, classes were observed – in terms of information delivered. The co-chairs performed content analyses on the assignment handouts, highlighting the explicitly-stated research skills and noting the assumed

implicit research skills needed to successful complete the tasks. Each faculty member independently examined the skills list, and noted in which required class an assignment:

- used the skills (expected that students already knew it)
- included a handout or involved a brief discussion about the skill
- included classtime instruction about the skills.

Simultaneously, student focus groups did the same task. They had a hard time remembering which class included the skill, so instead the students identified at which grade they thought they learned the skill. As with the faculty, different students had different experiences. Occasionally, a student would remind a peer about a particular assignment where a skill was used. This kind of interaction pointed out the need for group processing – and the limits of regression over time.

Students brought up the fact that they had learned several skills in middle school. Therefore, feeder school librarians were brought into the research process. The credentialed library media teachers reached a consensus about which skills to address, although additional skills might be taught beyond the minimum standards. In a follow-up meeting with non-credentialed librarians, those minimum skills were not systematically addressed, although they agreed to include them thereafter. As a side finding, GPAs of the feeder school students were analyzed, and those schools having a credentialed librarian graduated students who performed better their freshman year at high school.

The data were analyzed across sections of the same course (taught by different teachers), across grade level and across department as well as within grade and department. In some cases, variances in instruction were significant within courses; in other departments a clear sequence of skills instruction and practice were observed. Where variances occurred, the department chair used the data to help calibrate instruction, at least within the same course.

The Whose Problem is It?

Students needed to improve their skills. They needed to learn them and practice them. Teachers also needed to improve their instruction (and assignments) in these areas, and they needed to coordinate their efforts within and across disciplines. The library media teacher needed to make sure those information literacy skills were coordinated – and taught in research assignments. At another faculty meeting, these gaps were discussed, and possible interventions were brainstormed.

Based on that discussion and on the data analysis, the study group identified the following tasks to best meet the study's goals:

- develop a scope-and-sequence instruction across the curriculum on information literacy
- develop assignments that precluded plagiarism
- develop and institute standard research and citation models
- develop curriculum and instructional aids to help students become information literate.

Developing Research Products

Both teachers and students loudly wanted guides to help them in the research process. The library media teacher (LMT) took the lead to develop the following products.

Standardized bibliographic stylesheets. Updated guidelines were the greatest needed item, according to teachers. Consulting MLA and APA print and online documents, the LMT

developed one-sheet guidelines for each, using generic layout and an example for each source medium. Study group members reviewed and pilot-tested the guidesheets, and modified them accordingly. It was noted that a sample bibliography was found useful as an exemplar for students. All faculty agreed to use one of the two styles for assignments, and the sheets were posted online on the library's Web page.

Research process and product rubrics. The school was using rubrics routinely, and another action research group was developing a set of rubrics to evaluate oral presentations. Using the Kansas study and the California English teachers' work, RSSG developed, pilot-tested, and approved two complementary rubrics associated with research. (Faculty could not come to consensus about one all-inclusive rubric, so process and product were dealt with separately). Even issues of scale (1-6) needed to be ironed out; the 6-point scale was used to align with most other Redwood rubrics. Because plagiarism was such a big issue at the school, an explicit mention of that practice was included in the rubric; students couldn't get a passing "3" if resources weren't cited or if plagiarism was evident.

Research handbook. A little-used handbook from the 1980s existed, but desperately needed updating. While the English department was approached to update their old guide, it was decided that the LMTs should spearhead this effort. The Redwood LMT took the lead, aligning the research steps to the school's new list and to the AASL standards. RSSG reviewed and modified the handbook as they pilot-tested it. Students also gave valuable feedback, including thoughts about wording, which was incorporated into the final product. A supplemental teacher's guide was also created to help faculty instruct students in research processes. RSSG made sure that the handbook could be used as a "consumable" workbook, and that students and teachers could take one page/step of it as a research process focus worksheet. The final version was given to all faculty and students, and was posted on the library's Web page for easy access at school and home.

Library Research Web page. The need for a stable library Web page focused on research aid became apparent. Documents needed to be posted, and students needed Web "jumpstarting" as they researched. Up to that point, the library kept Rolodexes of Web sites, and would bookmark individual machines with starter URLS; such practice was inefficient at that point. Beyond the typical information about the library, the site incorporated the research products listed above, and provided Webliographies for various departments and their assignments. A separate listing of professional Web sites was developed for teachers (http://www.rhsweb.org/intro). As the subject-specific Webliographies became popular, departments that had not used the library for research much, started asking for the same services – and their students used the library more as a result.

Teacher Education and Coordination

The first step in teacher coordination involved a faculty in-service workshop where all members reviewed the findings of the instructional "mapping" of research skills. Using a color-coded list (based on department practices), the faculty as a body was able to negotiate grades, departments and courses in which specific instruction and assignments would occur. Only one gap remained after the process, videotaping, and that practice occurred in most foreign language classes. (English took on this skill informally.) In some cases, skills were incorporated in several courses, so teachers decided who would take the lead and who would reinforce the learning. Because of this explicit coordination, faculty trusted their colleagues more to share the "burden" of information literacy, and to depend on their practice to help students progress faster and deeper.

A separate in-service workshop was given to help faculty evaluate Web sites, and to construct plagiarism-proof assignments. Teachers were provided several plagiarism Web sites, a list of typical topics (AIDS, Michelangelo, environment, Steinbeck, etc.) and given a simulation to do in small cooperative groups: "Pretend you're a high school student who needs to write an acceptable research paper in 30 minutes." The teachers had fun, and realized how important it was to evaluate resources and to craft assignments that drew upon higher thinking skills.

Another faculty in-service workshop focused on rubrics, folding into the other action group's work. Teachers saw how the process rubric, in particular, could be used with students at the beginning of their freshman year to self-diagnose information literacy skills and to develop a plan for self-improvement along those lines.

Assessing the Results

How well did the plan work? The same assessment methods were used at the end of the semester as were used one year prior for the baseline. Among the findings were the following:

- Assignments included clearer and more explicit language about information literacy skills.
- Assignments within in the same course were more uniform.
- Great use was made of the research guides by students and teachers.
- Classes of students asked more higher-level questions when doing research.
- Web site evaluation was taught explicitly in the freshman computer course, and practiced in that grade's science and social studies assignments.
- More attention was made to research process along with research product.
- More students completed research assignments, and work was more solid.
- Reading skills improved.
- Resources were cited more often and more accurately.
- Less plagiarism was evident.
- The LMT was more involved in the research process, including the assessment of research products.

Several outcomes furthered the action research results beyond original expectations. Faculty communicated more within and across department lines. Special education teachers became more involved in the process – and accepted into the school's governance structure. Technology was incorporated to a greater extent into the curriculum. Feeder schools worked more closely with Redwood High School; at least one feed school made information literacy a priority because of Redwood's efforts. Parents became interested in the project, and the LMT gave a workshop for them on Internet use.

At the end of the first year of action research, the following questions arose:

- How can more thorough and standardized assessment be conducted?
- How can data be disaggregated to a greater degree with more impact?
- How can coordination of research and instruction between departments be optimized?

Plenty of work remains in this ongoing effort. The trick will be to sustain reform efforts over time.

Impact of the Action Research

This action research project was effective for several reasons: 1) it grew out of teacher-perceived need; 2) the effort was student-centered; 3) classroom teachers partnered with the LMT, and took leadership responsibility for the product and impact; 4) the entire faculty was involved throughout the process, and "owned" it.

The presence of a schoolwide reform effort and district outcomes provided impetus and administrative support (including a period off for the co-chair). The high-profile of rubrics within the school made it easier to construct and use them. Having national AASL standards and research studies on hand gave the action research credibility. Creating a simple-to-use Web research page, with quick updates, has broadened access to research sources both within the school and at home. The incorporation of technology also strengthened faculty interest in improving their skills and infusing technology into classroom practice. More multimedia projects are being developed, for example, and the school was poised to develop their Digital High School proposal.

By using action research methods, Redwood High School was able to reflect professionally and systemically about student achievement and educational best practices. In terms of library media programs, action research provided the objective credibility that was needed for teachers to "buy" into information literacy. Moreover, the research led to practical products that helped students and teachers become more information literate. Truly a win-win situation that can be replicated in other settings.

---

1. *BASRC is a multi-million dollar educational project sponsored by the Annenberg Foundation and the William and Flora Hewlett Foundation. BASRC's mission is to "help schools across the region to engage in a comprehensive transformation process to become thoughtful, caring communities with a common purpose and a commitment to the growth and learning of all children and adults." Over 100 schools in the San Francisco Bay area have participated in this five-year reform effort from 1996 to 2001.*

References:

American Association of School Librarians and Association for Educational Communications and Technology. *Information Power.* Chicago: American Library Association, 1998.

California School Library Association. *From Library Skills to Information Literacy.* 2d ed. San Jose: HiWillow, 1997.

Colorado State Department of Education. http://cde.state.co.us/cdelib/ slinfolitindex.htm

Eisenberg, M. and R. Berkowitz. *Information Problem Solving.* Norwood, NJ: Ablex, 1990.

Grover, Robert et al. "Planning and Assessing Learning across the Curriculum."

Knowledge Quest, v28 n1, Sep-Oct 1999, p10-11,13-16.

International Society for Technology in Education. http://www.iste.org

Loertscher, D. and B. Woolls. *Information Literacy: A Review of the Research.* San Jose: Hi Willow, 1999.

Oregon Educational Media Association. http://www.teleport.com/~oema/ infolit.htm

Putnam Valley School District. http://www.PutnamValleySchools.org/ Standards.html